

Appl. No. 10/697,312

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) A method of protecting any one of a plurality of optical signals of a multi-wavelength optical signal from failure of a photonic switching fabric, the method comprising:

optically splitting the multi-wavelength optical signal to obtain a protection portion of the multi-wavelength optical signal comprising protection portions of each of the optical signals;

detecting a failure in the photonic switching fabric which would affect a particular optical signal of the plurality of optical signals;

redirecting the protection portion of the multi-wavelength optical signal around the failure in the photonic switching fabric; and

after the redirecting step has been completed, wavelength filtering the protection portion of the multi-wavelength optical signal to obtain the protection portion of the particular optical signal.

2. (Previously presented) A method according to claim 1 wherein the photonic switching fabric comprises a dedicated switching fabric portion and a redundant switching fabric portion, and the step of redirecting comprises inputting the protection portion of the multi-wavelength optical signal through the redundant switching fabric portion.

3. (Original) A method according to claim 2 wherein the step of optically splitting the multi-wavelength optical signal is further to obtain an in-service portion of the multi-wavelength optical signal, the method further comprising the step of:

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directing the in-service portion of the multi-wavelength optical signal toward the dedicated switching fabric for switching therethrough.

4. (Previously presented) A method according to claim 3 wherein the step of wavelength filtering comprises passing the protection portion of the multi-wavelength optical signal through a tunable optical filter, the method further comprising:

optically combining the protection portion of the particular optical signal after it has passed through the tunable optical filter with a second multi-wavelength optical signal from the dedicated switching fabric portion.

5. (Original) A method according to claim 4 wherein the step of wavelength filtering further comprises:

tapping the protection portion of the particular optical signal after it has been wavelength filtered to obtain an indication of an optical power of the protection portion of the particular optical signal; and

tuning the tunable optical filter with use of the indication of the optical power.

6. (Previously presented) A method according to claim 4 further comprising:

after the step of directing the in-service portion of the multi-wavelength optical signal toward the dedicated switching fabric portion, demultiplexing the in-service multi-wavelength optical signal into a plurality of in-service optical signals;

passing the plurality of in-service optical signals to the dedicated switching fabric portion for switching therethrough; and

before the step of optically combining the particular optical signal with the second multi-wavelength optical signal, multiplexing a second plurality of in-service optical signals

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emerging from the dedicated switching fabric portion into the second multi-wavelength optical signal.

7. (Currently Amended) A method according to claim 1 wherein the failure of the ~~optical component~~ photonic switching fabric is associated with a stray optical signal emerging from an output of the ~~optical component~~ photonic switching fabric the particular optical signal would have emerged from had the ~~optical component~~ photonic switching fabric not failed, the method further comprising:

optically blocking the stray optical signal emerging from the output of the ~~optical component~~ photonic switching fabric.

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Previously presented) A protection switching arrangement for protecting any one of a plurality of optical signals of a multi-wavelength optical signal from a detected failure of a photonic switching fabric, the protection switching arrangement comprising:

an optical splitter for optically splitting the multi-wavelength optical signal to obtain a protection portion of the multi-wavelength optical signal comprising protection portions of each of the optical signals;

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redirecting means coupled to the optical splitter for redirecting the protection portion of the multi-wavelength optical signal around the detected failure of the photonic switching fabric; and

a tunable optical filter coupled to the redirecting means for wavelength filtering the protection portion of the multi-wavelength optical signal to obtain the protection portion of any particular optical signal of the plurality of optical signals affected by the failure.

15. (Previously presented) A protection switching arrangement according to claim 14 wherein optically splitting the multi-wavelength optical signal is further to obtain an in-service portion of the multi-wavelength optical signal, wherein the redirecting means comprising a protection optical waveguide for inputting the protection portion of the multi-wavelength optical signal through a redundant switching fabric portion, and wherein the photonic switching fabric comprises a dedicated switching fabric portion, the protection switching arrangement further comprising:

an ingress optical waveguide for directing the in-service multi-wavelength optical signal toward the dedicated switching fabric portion for switching therethrough.

16. (Previously presented) A protection switching arrangement according to claim 15 further comprising:

an optical combiner coupled to an output of the tunable optical filter for optically combining the protection portion of the particular optical signal after it has passed through the tunable optical filter with a second multi-wavelength optical signal from the dedicated switching fabric portion.

17. (Original) A protection switching arrangement according to claim 16 further comprising:

an optical tap coupled to the output of the tunable optical filter for tapping the protection portion of the particular optical signal after it has been wavelength filtered to obtain

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an indication of an optical power of the protection portion of the particular optical signal, said indication of the optical power for use in controllably tuning the tunable optical filter.

18. (Previously presented) A protection switching arrangement according to claim 16, the protection switching arrangement further comprising:

a demultiplexer coupled to the ingress optical waveguide for demultiplexing the in-service portion of the multi-wavelength optical signal into a plurality of in-service optical signals;

a plurality of ingress in-service optical waveguides optically coupled to outputs of the demultiplexer for passing the plurality of in-service optical signals to the dedicated switching fabric portion for switching therethrough; and

a multiplexer for multiplexing a second plurality of in-service optical signals emerging from the dedicated switching fabric into the second multi-wavelength optical signal before it is combined with the protection portion of the particular optical signal.

19. (Currently Amended) A protection switching arrangement according to claim 14 wherein the failure of the ~~optical component~~ photonic switching fabric is associated with a stray optical signal emerging from an output of the ~~optical component~~ photonic switching fabric the particular optical signal would have emerged from had the ~~optical component~~ photonic switching fabric not failed, the protection switching arrangement further comprising:

an optical blocker coupled to the output of the ~~optical component~~ photonic switching fabric for optically blocking the stray optical signal emerging from the output of the ~~optical component~~ photonic switching fabric.

20. (Cancelled)

21. (Cancelled)

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22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Previously presented) An egress trunk line card for use in protecting any one of a plurality of optical signals of a multi-wavelength optical signal from a detected failure of a dedicated switching fabric portion of a photonic switching fabric, the egress trunk line card comprising:

redirecting means for redirecting a protection portion of the multi-wavelength optical signal comprising protection portions of each of the optical signals around the dedicated switching fabric portion;

a tunable optical filter coupled to the redirecting means for wavelength filtering the protection portion of the multi-wavelength optical signal to obtain the protection portion of a particular optical signal which would have been affected by the failure; and

an optical combiner coupled to an output of the tunable optical filter for optically combining the protection portion of the particular optical signal after it has passed through the tunable optical filter with a second multi-wavelength optical signal from the dedicated switching fabric.

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30. (Cancelled)

31. (Cancelled)